CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
SAN FRANCISCO BAY REGION

ORDER NO. 94-055
NPDES NO. CA0029297

REISSUANCE OF WASTE DISCHARGE REQUIREMENTS FOR:

UNION OIL COMPANY OF CALIFORNIA
401 HIGH STREET, OAKLAND
ALAMEDA COUNTY

The California Regional Water Quality Control Board, San Francisco Bay Region (hereinafter called the Board) finds that:

1. Union Oil Company of California (dba Unocal), hereinafter called the discharger, by application dated April 13, 1993, has applied for re-issuance of waste discharge requirements under the National Pollutant Discharge Elimination System (NPDES).

2. The discharger owns the former bulk chemical distribution facility at 401 High Street, in the City of Oakland, Alameda County (Figure 1, attached to this Order), located adjacent to the Oakland Inner Harbor which is contiguous with the San Francisco Bay.

3. A major spill was reported at this site in June of 1983 when 23,300 gallons of toluene was spilled during rail car off-loading at the Unocal tank farm.

4. Since 1983, the discharger has conducted extensive soil and groundwater investigations both on and off site to characterize the scope of the toluene spill. Interim remedial actions have been taken by Unocal to address the spill including the construction and operation of an interceptor trench which runs along the western shoreline of the property. The trench is designed to remove groundwater that would impact the Oakland Inner harbor, from the uppermost water bearing zone (Zone A). Groundwater is treated using activated carbon and discharged under NPDES permit to the Oakland Inner Harbor.

5. Additional subsurface investigations detected soil and groundwater pollution sources on and off site believed attributable to historic operations, spillage,

inadequate chemical handling practices, overflows and or leakage from tanks and piping. Responsible parties for these discharges have been identified and are regulated by Board Site Cleanup Requirements (Order 90-133 and Order 93-025). One objective of these Orders is the installation of an interim remedial system to address polluted groundwater in the contiguous water bearing zone (Zone B) impacted by the discharger and other responsible parties.

6. The interim remedial system for these sites will extract groundwater from multiple extraction points on the 401 and 411 High Street properties. Groundwater on the 411 High Street property will be pumped to the 401 High Street site for treatment by air stripping and polishing by activated carbon before discharging to the Oakland Inner Harbor.

7. Dissolved volatile organic compounds (VOCs) detected in groundwater monitor wells in Zone B include: tetrachloroethylene (PCE), trichloroethylene (TCE), 1,1,1-trichloroethane, and 1,1,2 -trichloroethane (TCA), 1,1-dichloroethane (1,1-DCA), and 1,1-dichloroethylene (1,1-DCE), chloromethane, dichloromethane (methylene chloride), 1,1,2, tri-chloro-1,2,2,- trifluoroethene (Freon-113), vinyl chloride, benzene, ethylbenzene, acetone, toluene, methylethylketone (MEK), isopropanol, xylenes and petroleum hydrocarbons as gasoline and diesel. Semi-volatile compounds detected in groundwater include: flouranthene, isophorone, napthalene, phenanthrene, pyrene, phenol,and pentachlorophenol.

8. This Order allows for the discharge of groundwater generated by both the interceptor trench system and the combined groundwater extraction system for the 401 and 411 High Street properties.

9. Based upon the criteria in Board Resolution No. 88-160 and on information submitted by the discharger, the Board finds that treated extracted groundwater reclamation, re-use, or discharge to POTW from the 411 High Street site is not feasible.

10. The Basin Plan contains water quality objectives for Central San Francisco Bay and contiguous surface and ground waters

11. The existing and potential beneficial uses of the Oakland Estuary, San Leandro Bay, and Central San Francisco Bay include:

- Contact and non-contact water recreation
- Wildlife habitat
- Preservation of rare and endangered species
- Estuarine habitat
- Fish spawning and migration

- Industrial service supply
- Shellfishing
- Navigation
- Ocean commercial and sport fishing

12. The Basin Plan prohibits discharge of "all conservative toxic and deleterious substances, above those levels which can be achieved by a program acceptable to the Board, to waters of the Basin." The discharger's ground water extraction and treatment systems and associated operation, maintenance, and monitoring plans constitute an acceptable control program for minimizing the discharge of toxicants to waters of the State.

13. Effluent limitations of this Order are based on the Clean Water Act, Basin Plan, State and U.S. Environmental Protection Agency (EPA) plans and policies, and best engineering and geologic judgement. EPA Region IX draft guidance "NPDES Permit Limitations for Discharge of Contaminated Groundwater: Guidance Document" was also considered in the determination of effluent limits.

14. The issuance of waste discharge requirements for this discharge is exempt from the provisions of Chapter 3 (commencing with Section 21100) of Division 13 of the Public Resources Code (CEQA) pursuant to Section 13389 of the California Water Code.

15. The Board has notified the discharger and interested agencies and persons of its intent to issue waste discharge requirements for the discharge and has provided them with the opportunity for a public hearing and an opportunity to submit their written views and recommendations.

IT IS HEREBY ORDERED that the discharger, its agents, successors, and assigns in order to meet the provisions contained in Division 7 of the California Water Code and regulations adopted thereunder, and the provisions of the Clean Water Act and regulations and guidelines adopted thereunder, shall comply with the following:

A. EFFLUENT LIMITATIONS

1. The effluent, at the discharge point to the storm drain, shall not contain constituents in excess of the limits contained in Table 1:

Table 1

Constituent	Instantaneous Maximum (µg/l)

a. Halogenated Volatile Organic Compounds

trichloroethylene (TCE)	5.0
tetrachloroethylene (PACE)	5.0
1,1,1-trichloroethane (TCA)	5.0
1,1-dichloroethane (1,1-DCA)	5.0
1,2-dichloroethane (1,2-DCA)	5.0
1,1-dichloroethylene (1,1-DCE)	5.0
cis + trans-1,2-dichloroethylene	5.0
1,1,2-trichloro-1,2,2-triflouroethane (Freon 113)	5.0
chloroethene (vinyl chloride)	5.0
chloroform	5.0
chlorobenzene	5.0
carbon tetrachloride	5.0
Any other volatile organic compound (as identified by EPA Method 601 or 624)	5.0

b. Volatile Organic Compounds

Acetone	200.0
Benzene	5.0
Toluene	5.0
Ethylbenzene	5.0
Methylene Chloride	5.0
Methyl Ethyl Ketone (MEK)	50.0
Methyl Isobutyl Ketone (MIBK)	50.0
Total Xylenes	5.0
Any other volatile organic compound (as identified by EPA Method 601and 602 or 624)	5.0

c. Semi-Volatiles

phenol	5.0
pentachlorophenol (as identified by EPA method 8270)	5.0

c. Total Petroleum Hydrocarbons 50.0
(as identified by modified EPA method 8015)

d. Polynuclear Aromatic Hydrocarbons 15.0
(defined as the sum of acenphthylene, anthracene, 1,2-benzanthracene, 3,4-benzoflouranthene, bezo[k]flouranthene, 1,12-benzoperylene, benzo[a]pyrene, chrysene, dibenzo[ah]anthrcene, flourene,

	indeno[1,2,3-cd]pyrene, phenanthrene, and pyrene) (as identified by EPA Method 8270)	
e.	Ethylene Dibromide (as identified by Method 504)	5.0
b.	Inorganics	
	arsenic	20.0
	cadmium	10.0
	chromium (VI)	11.0
	copper	20.0
	cyanide	20.0
	lead	5.6
	mercury	1.0
	nickel	7.1
	selenium	5.0
	silver	2.3
	zinc	58.0

2. The flow of the discharge shall be limited to the treated groundwaters removed from the two uppermost shallow aquifers (designated Zone A and B).

3. The pH of the discharge shall not exceed 8.5 nor be less than 6.5.

4. In any representative set of samples, the discharges shall meet the following limit of quality:

   Toxicity: The survival of test fishes in 96-hour static bioassays of the undiluted effluent as discharged shall be a three sample moving median of 90% survival, and a 90 percentile value of not less than 70% survival in a single sample. The bioassays shall be performed according to protocols approved by the U.S. EPA or the State Water Resources Control Board or published by the American Society for Testing and Materials or American Public Health Association. Two fish species will be tested concurrently. These shall be the most sensitive two species determined from a single concurrent screening of three using two of the following three test fish species in parallel tests. The test fish shall be rainbow trout, fathead minnow, or three-spine stickleback.

   The compliance monitoring may be carried out with one, most sensitive fish species if both of the following conditions are met:

- the discharger can document that the acute toxicity limitation, as described above, has not been exceeded during the previous three years, or that acute toxicity has been observed in only one of two fish species, **and**

- a single screening using all three fish species confirms the documented pattern.

B. RECEIVING WATER LIMITATIONS

1. The discharge of wastes shall not cause the following conditions to exist in waters of the State at any place:

   a. floating, suspended, or deposited macroscopic particulate matter or foam;

   b. bottom deposits or aquatic growths;

   c. alteration of temperature or apparent color beyond present natural background levels;

   d. visible, floating, suspended, or deposited oil or other products of petroleum origin;

   e. toxic or other deleterious substances to be present in concentrations or quantities which will cause deleterious effects on aquatic biota, wildlife, or waterfowl, or which render any of these unfit for human consumption either at levels created in the receiving waters or as a result of biological concentrations.

2. The discharge of waste shall not cause the following limits to be exceeded in waters of the State in any place within one foot of the water surface:

   a. pH: The pH shall not be depressed below 6.5 nor raised above 8.5, nor caused to vary from normal ambient pH levels by more than 0.5 units.

   b. Dissolved oxygen: 5.0 mg/l minimum. The median dissolved oxygen concentration for any three consecutive months shall not be less than 80% of the dissolved oxygen content at saturation. When natural factors cause lesser concentration(s) than specified above, the discharge shall not cause further reduction in the concentration of dissolved oxygen.

c. Un-ionized ammonia (as N):

0.025 mg/l annual mean
0.4 mg/l maximum

3. This discharge shall not cause a violation of any applicable water quality standard for receiving waters adopted by the Board or the State Water Resources Control Board as required by the Federal Water Pollution Control Act and regulations adopted thereunder. If more stringent applicable water quality standards are promulgated or approved pursuant to Section 303 of the Federal Water Pollution Control Act or amendments thereto, the Board will revise and modify this Order in accordance with such more stringent standards.

C. PROVISIONS

1. The discharger shall comply with all sections of this order immediately upon adoption by the Board and upon starting any discharge.

2. The discharger shall comply with the self-monitoring program as adopted by the Board and as may be amended by the Executive Officer.

3. The discharger shall notify the Board if any activity has occurred or will occur which would result in the discharge, on a frequent or routine basis, of any toxic pollutant which is not limited by this Order.

4. Any discharge to a location other than the discharge point(s) specified in this Order will require a modification to this Order.

5. The discharger shall send as-built drawings of the remediation system(s).

6. The discharger shall comply with all items of the attached "Standard Provisions, Reporting Requirements and Definitions" dated December 1986 and modified January 1987, except items A.10, B.2, B.3, C.8 and C.11.

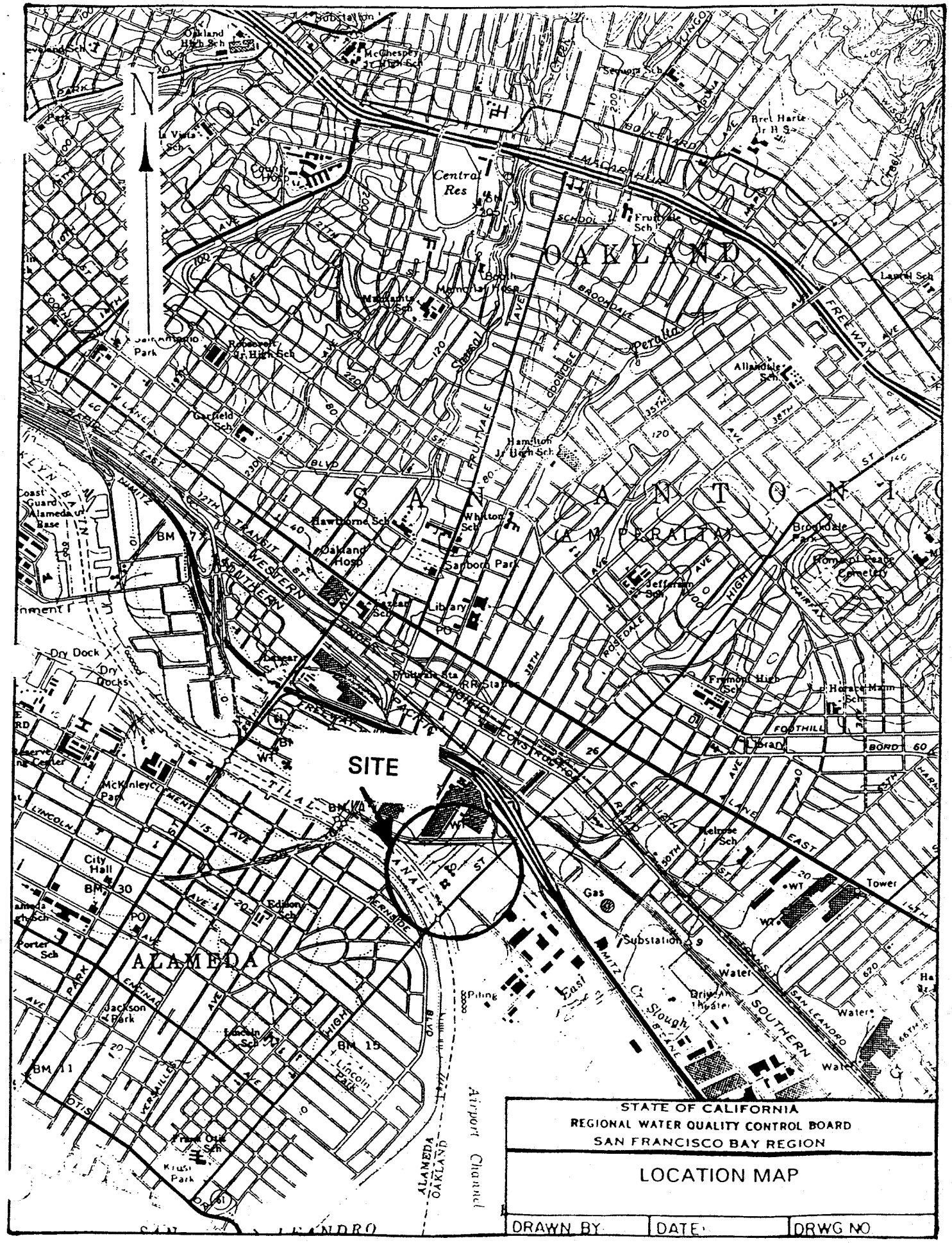
7. This Order expires May 18, 1999. The discharger must file a report of waste discharge in accordance with Title 23, Division 3, Chapter 9 of the California Code of Regulations no later than 180 days in advance of such expiration date as application for issuance of new waste discharge requirements.

8. This Order shall serve as a National Pollutant Discharge Elimination System Permit pursuant to Section 402 of the Clean Water Act or amendments thereto, and shall become effective 10 days after date of its adoption provided the Regional Administrator, Environmental Protection Agency, has no objection. If the Regional Administrator objects to its issuance, the permit shall not become effective until such objection is withdrawn.

I, Steven R. Ritchie, Executive Officer, do hereby certify that the foregoing is a full, true and correct copy of an Order adopted by the California Regional Water Quality Control Board, San Francisco Bay Region, on May 18, 1994.

STEVEN R. RITCHIE
Executive Officer

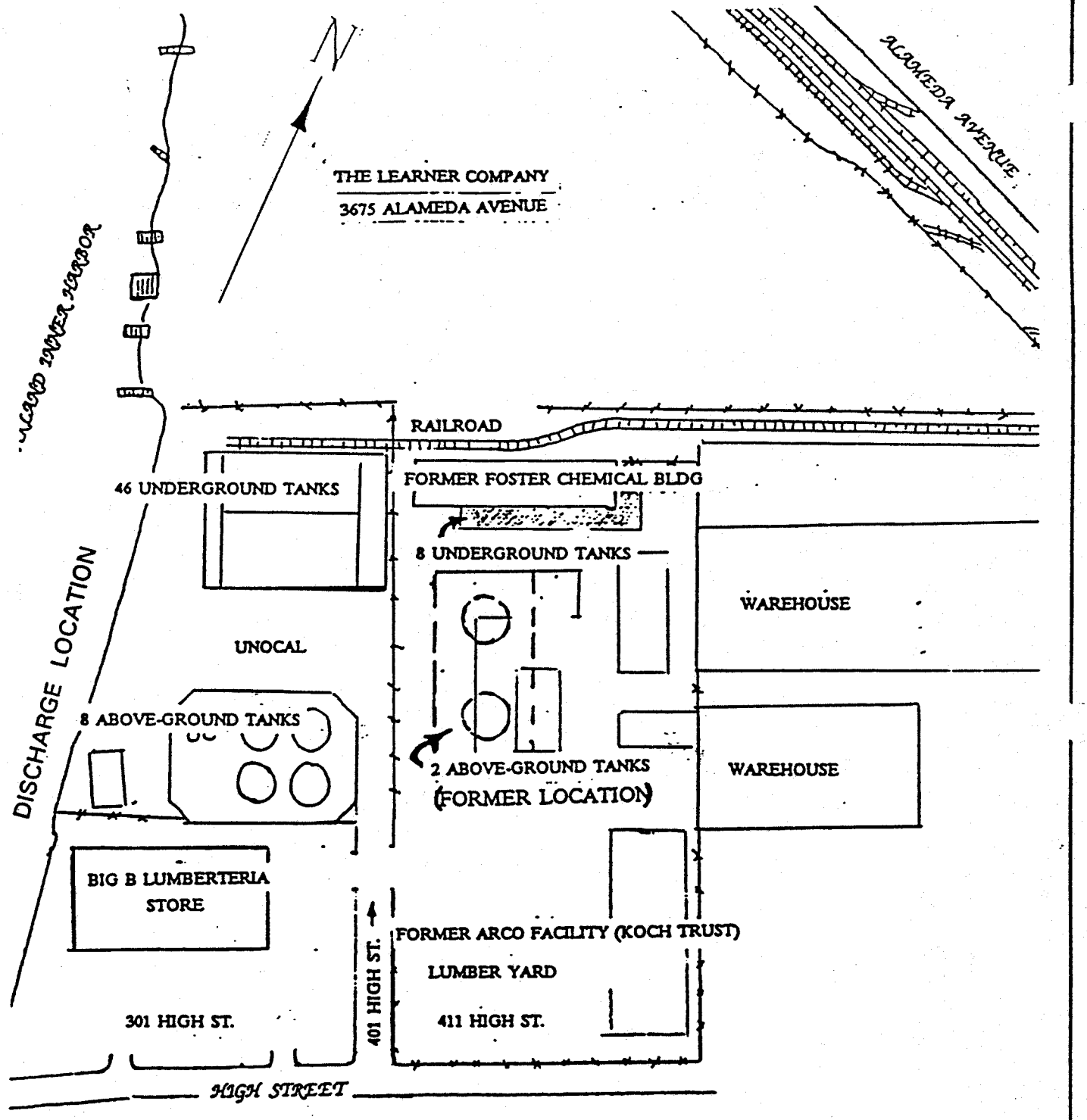
Attachments: Figures - Location Map
Project Map
Self-Monitoring Program



STATE OF CALIFORNIA
REGIONAL WATER QUALITY CONTROL BOARD
SAN FRANCISCO BAY REGION

LOCATION MAP

DRAWN BY	DATE	DRWG NO



STATE OF CALIFORNIA
REGIONAL WATER QUALITY CONTROL BOARD
SAN FRANCISCO BAY REGION

PROJECT MAP

DRAWN BY:	DATE:	DRWG NO.

CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
SAN FRANCISCO BAY REGION

SELF-MONITORING PROGRAM

FOR:

UNION OIL COMPANY
401 HIGH STREET
OAKLAND, ALAMEDA COUNTY

NPDES NO. CA0029297

ORDER NO.94-055

CONSISTS OF:

PART A Dated December 1986 and modified January 1987

PART B ADOPTED May 18, 1994

PART B

UNOCAL
401 HIGH STREET
OAKLAND, ALAMEDA COUNTY

I. DESCRIPTION OF SAMPLING STATIONS

A map with locations of treatment and discharge shall be included in each Self Monitoring Plan report

A. INFLUENT

Station	Description
I-1...I-n	At any point(s) in the ground water collection system(s) immediately prior to treatment at any treatment location(s).

B. EFFLUENT

Station	Description
E-2...E-n	At any point(s) following treatment at any treatment location(s).

C. RECEIVING WATERS

Station	Description
C-1...C-n	At any point(s) in the Oakland Estuary at least 100 feet but no more than 200 feet downstream from the storm drain discharge point(s) of E-1 through E-n .
C-2...C-n	At any point(s) in the Oakland Estuary at least 100 feet but no more than 200 feet upstream from the storm drain discharge point(s) of E-1 through E-n.

II. SCHEDULE OF SAMPLING AND ANALYSIS

The schedule of sampling and analysis is provided in the attached Table A.

III. MODIFICATIONS TO PART A, DATED DECEMBER 1986 AND MODIFIED JANUARY 1987

All items of Self-Monitoring Program Part A, dated December 1986 and as modified January 1987 shall be complied with except for the following:

A. Additions to Part A: Section G.4.d.5: "Results from each required analysis and observation shall be submitted as laboratory originated data summary sheets in the quarterly self-monitoring reports. All chromatographic peaks for purgeable halocarbons and/or volatile organics shall be identified and quantified for all effluent samples. If previously unquantified peaks are identified in any effluent sample, then these peaks shall be confirmed based on analyses using chemical standards necessary to achieve proper identification and quantification. Results shall also be submitted for any additional analyses performed by the discharger at the specific request of the Board for parameters for which effluent limits have been established and provided to the discharger by the Board."

B. Deletions from Part A: Sections D.2.b., D.2.g., D.3.b., E.1.e.1, E.1.f., E.2.b., E.3., E.4., E.5., F.2.b., G.2., G.4.b., and G.4.f.

C. Modifications to Part A: For the following, the discharger shall comply with the Sections as changed and reported herein:

1. Section D.1. is changed to read:

"Samples of influent shall be collected according to the schedule in Part B and shall not include any plant recirculation or other sidestream wastes. Deviation from this must be approved by the Executive Officer."

2. Section D.2.a. is changed to read:

"Samples of effluent and receiving waters shall be collected at times coincident with influent sampling unless otherwise stipulated. The Regional Board or Executive Officer may approve an alternative sampling plan if it is demonstrated that expected operating conditions warrant a deviation from the standard sampling plan."

3. Section D.2.d. is changed to read:

"If two consecutive samples of any one constituent or parameter monitored on a weekly or monthly basis in a 30-day period exceed the effluent limit or are otherwise out of compliance, or if the required sampling frequency is once per month or less (quarterly,

annually or other) and the sample or parameter exceeds the limit or is otherwise out of compliance, the discharger shall implement procedure(s) acceptable to or approved by the Board's Executive Officer, on a case by case basis."

4. Section D.2.e. is changed to read:

"If any instantaneous maximum limit is exceeded, within 24 hours of receiving the analytical results indicating the violation, a confirmation sample shall be taken and analyzed with 24 hour turn-around time. If the instantaneous maximum is violated in the second sample, the discharge shall notify Regional Board staff immediately. The Executive Officer may order the discharge to be terminated, on a case-by-case basis."

5. In Section F.1., the phrase "(at the waste treatment plant)" is changed to read, "(to Regional Board or U.S. Environmental Protection Agency staff for inspection)."

6. Section F.2.a. is changed to read:

"Record flows from totalizing meters every two weeks and calculate average daily flow for each month."

7. Section F.2.b. is changed to read:

"Establish flows per minute and estimate flow in gallons per day."

8. Quarterly written reports required in Section G.4 shall be filed quarterly by the thirtieth day of the following month.

9. Section G.4.e is changed to read:

"Summary tabulations of the data shall include, for each constituent, total number of analyses, maximum, minimum, and average values for each period. Total flow data shall also be included. This information shall be prepared in a format similar to EPA Form 3320-1. This information shall be submitted only to the Board:

Executive Officer
California Regional Water Quality Control Board
2101 Webster Street, Suite 500

Oakland, CA 94612

10. The Annual Report required in Section G.5. shall be submitted by January 30 of each year in place of the quarterly report due on the same day.

IV. MISCELLANEOUS REPORTING

If any chemicals or additives are proposed to be used in the operation and/or maintenance of the ground water extraction/treatment system, the discharger shall obtain the Executive Officer's concurrence prior to use. The details concerning such approved use shall be reported in the next periodic report submitted to the Board.

I, Steven R. Ritchie, Executive Officer, hereby certify that the foregoing Self-Monitoring Program:

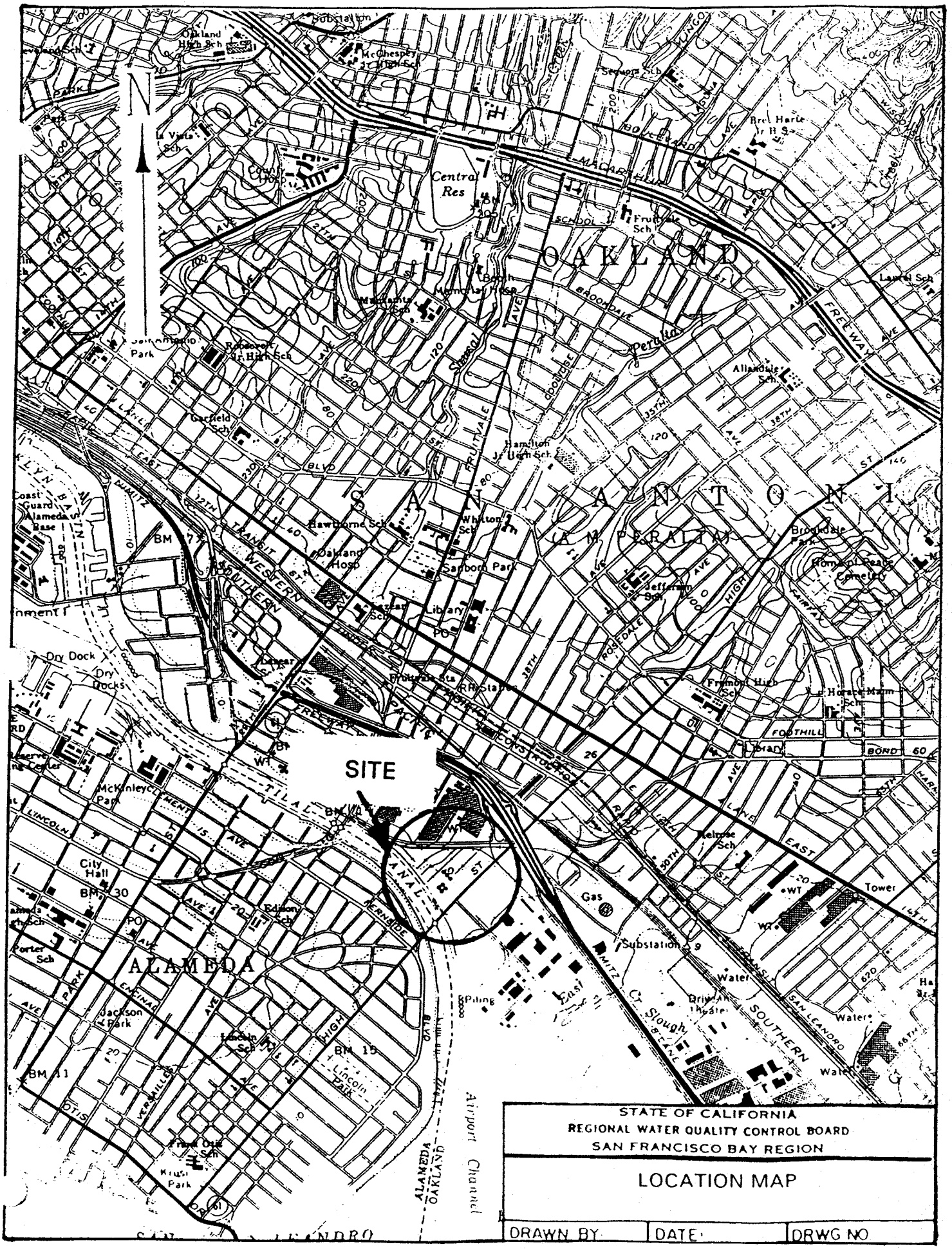
1. Has been developed in accordance with the procedure set forth in this Board's Resolution No. 73-16 in order to obtain data and document compliance with waste discharge requirements established in Regional Board Order No. 92-135.

2. Was adopted by the Board on May 18, 1994

3. May be reviewed at any time subsequent to the effective date upon written notice from the Executive Officer or request from the discharger, and revisions will be ordered by the Executive Officer or the Board.

STEVEN R. RITCHIE
Executive Officer

Attachments: Table A
Figure 1 - Location Map



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LOCATION MAP

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